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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,653	02/13/2002	Stephen F. Sagan	DLP078	6076

7590 11/26/2003

Digilens Inc.  
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EXAMINER

CURTIS, CRAIG

ART UNIT PAPER NUMBER

2872

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/074,653

Applicant(s)

SAGAN ET AL.

Examiner

Craig H. Curtis

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2872

NW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Disposition of the Instant Application*

- This Office action is responsive to Applicants' Amendment A filed on 14 September 2003 and made of record in the file as Paper No. 4.
- By this amendment, Applicants have, inter alia, amended claims 1 and 2.
- Claims 1-3 currently are pending in the instant application.

### *Claim Objections*

1. **Claims 1-3 are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).**

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### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riza (US Pat. No. 5,694,216) in view of Popovich et al. (US Pat. No. 6,525,847).**

Riza discloses the invention as claimed--a variable optical attenuator (intended use) comprising an electrically switchable Bragg grating device (See 24 or 25 in Fig. 2A; also see col. 9, ll. 38-40, 64-67--col 10, ll. 1-67) positioned to accept an incident optical beam and divide said incident optical beam into a transmitted undiffracted component and a diffracted component (col. 9, ll. 47-63), and a polarization-converting reflector (27a & 27b) positioned to reflect said undiffracted component back through said electrically switchable Bragg grating device (col. 10, ll. 56-67)--**EXCEPT FOR** an explicit teaching wherein said electrically switchable Bragg grating (ESBG) device is a polymer-dispersed liquid crystal ESBG device. (As noted in the previous Office action, Riza additionally discloses wherein said polarization reflector respectively comprises a one-quarter-wave retardation plate and a mirror (col. 10, ll. 20-26), and a 45-degree Faraday rotation plate and a mirror, id.)

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Popovich et al., however, provide an explicit teaching of an electrically switchable polymer-dispersed Bragg grating device (viz., 10 in Fig. 1; also see col. 5, ll. 58-61; col. 10, ll. 28-31, 45-64), such a device being well-known in the optical art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Riza such that its electrically switchable Bragg grating device be of a polymer-dispersed liquid crystal variety, such a device being explicitly taught by Popovich et al., as opposed to the acousto-optic variety taught by Riza, for at least the purpose of providing, arguendo, finer control/tuning of the diffraction efficiency of said electrically switchable Bragg grating device.

### *Response to Arguments*

**3.** Applicants' arguments filed 14 September 2003 have been fully considered but have not been found persuasive.

Applicants' initially argue that although the acousto-optic deflector (AOD) disclosed by Riza and the electrically switchable Bragg grating (ESBG) are both electrically variable (read: switchable) grating devices, they are "...substantially different components with different characteristics." Page 4, fifth ¶, in Remarks section of Amendment A. While the Examiner concedes that to some extent this is the case, the fundamental issue is not the manner in which a particular optical effect is achieved (e.g., via an electro-optical effect vs. via an acousto-optical effect) but, instead, the end result: that is, the net effect such effects, whatever their fundamental phenomenological nature happens to be, have on light that is subjected to such effects. In the instant case, Applicants have attempted to distinguish the electrically

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switchable Bragg grating of the instant invention from that of the electrically switchable Bragg grating of Riza (which happens to be an acousto-optical deflector) by further qualifying that said electrically switchable Bragg grating of the instant invention is a polymer-dispersed liquid crystal ESBG. However, as set forth above, polymer-dispersed liquid crystal ESBGs are well-known in the art, and thus the substitution of such for the electrically switchable Bragg grating device of Riza would have been obvious to one having ordinary skill in the art at the time the invention was made.

Finally, with regard to Applicants' additional argument that Riza "...does not teach the use of the polarization-converting reflector as it is used in the present application (read: invention) for compensation of the polarization dependence of the grating device, the Examiner respectfully disagrees. The limitations recited in dependent claims 2 and 3 are very broad and, as such, are easily met by the disclosure of the combination (see Riza).

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### *Conclusion*

4. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### *Contact Information*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (703) 305-0776. The centralized facsimile phone number for the USPTO is (703) 872-9306.

Any inquiry of a general nature regarding the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.

*C.H.C.*  
Craig H. Curtis  
Group Art Unit 2872  
20 November 2003

*Andrey Chang*  
Primary Examiner  
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